In the claims

1. (Currently Amended) A photon emitting device, comprising:

a plurality of solid state radiation sources to generate radiation;

a plurality of optical concentrators, wherein each concentrator receives radiation from a corresponding one of said solid state radiation sources;

a plurality of optical waveguides, wherein each of the plurality of optical waveguides includes a first end and a second end, wherein each first end receives concentrated radiation from a corresponding concentrator, wherein a portion of the plurality of optical waveguides have shaped second ends such that light emitted from the shaped second ends is directed along a light path different from light emitted through non-shaped second ends; and

a support structure to stabilize the plurality of optical waveguides between the first and second ends.

2. (Original) The photon emitting device according to claim 1, wherein the plurality of solid state radiation sources comprises a plurality of LED dies.

3. (Original) The photon emitting device according to claim 2, further comprising:

an interconnect circuit layer to provide electrical connection to the plurality of LED dies, wherein the LED dies are bonded thereon;

a heat sink; and

a thermally conductive adhesive to thermally couple the interconnect circuit layer to the heat sink.

4. (Original) The photon emitting device according to claim 3, wherein the interconnect circuit layer comprises a metal layer having an electrical interconnect circuit patterned thereon, and a dielectric layer.

5. (Original) The photon emitting device according to claim 1, wherein the plurality of waveguides comprise a plurality of polymer waveguides.

6. (Original) The photon emitting device according to claim 1, wherein the plurality of waveguides comprises a plurality of optical fibers, the device further comprising a fiber array connector to support the first ends of the plurality of fibers in a defined pattern.

7. (Original) The photon emitting device according to claim 6, wherein the support structure comprises a housing, wherein the housing comprises a first aperture to enclose a perimeter of the fiber array connector and a second aperture to enclose at least the first portion of the second ends of the fibers.

8. (Original) The photon emitting device according to claim 7, wherein said housing further comprises a third aperture to support a second portion of the second ends of the fibers.

9. (Original) The photon emitting device according to claim 7, further comprising a banding to surround and secure at least the first portion of the second ends of the fibers.

10. (Original) The photon emitting device according to claim 9, wherein the banding comprises a polymer material that fixes at least the first portion of the second ends of the plurality of fibers in a selected pattern.

11. (Original) The photon emitting device according to claim 9, wherein the fiber array connector groups the first ends of the plurality of optical fibers in a pattern and wherein the banding fixes the first portion of the second ends of the plurality of optical fibers such that the plurality of optical fibers are uncrossed along a length of the plurality of optical fibers.

12. (Original) The photon emitting device according to claim 8, wherein the second ends of the first portion provide output illumination in a first direction and the second ends of the second portion provide output illumination in a second direction different from the first direction.

13. (Original) The photon emitting device according to claim 7, wherein the housing provides strain relief for the plurality of optical fibers.

14. (Original) The photon emitting device according to claim 7, wherein the second aperture is smaller than the first aperture.

15. (Original) The photon emitting device according to claim 6, wherein the support structure comprises a molding epoxy disposed around and between at least a portion of the fibers.

16. (Original) The photon emitting device according to claim 8, wherein the plurality of optical fibers comprise polymer coated clad silica fibers having a core and a cladding, said fibers having a core diameter of about 250 micrometers to about 1000 micrometers.

17. (Original) The photon emitting device according to claim 3, wherein the plurality of waveguides comprises a plurality of optical fibers, further comprising:

a fiber array connector to support the first ends of the plurality of optical fibers in a defined pattern; and

a sheeting to support the array of optical concentrators, wherein the optical concentrators comprise non-imaging reflective couplers.

18. (Original) The photon emitting device according to claim 17, further comprising:

a first alignment pin disposed longitudinally along a length of the illumination device, wherein the interconnect circuit layer, heat sink, fiber array connector and sheeting each include a first alignment hole to receive the first alignment pin.

19. (Original) The photon emitting device according to claim 17, wherein a first surface of the fiber array connector includes a plurality of longitudinally disposed protrusions, wherein a first surface of the sheeting includes a corresponding plurality of longitudinally disposed depressions engageably mateable with the protrusions.

20. (Cancelled)

21. (Original) The photon emitting device according to claim 8, wherein the second portion of second ends have shaped second ends such that light emitted from the shaped second ends is directed along a light path different from light emitted through non-shaped second ends.

22. (Original) The photon emitting device according to claim 1, further comprising:

an optical element to collect and distribute optical radiation from the optical waveguide second ends in a selected light distribution pattern.

23. (Original) The photon emitting device according to claim 2, wherein each LED die is spaced apart from its nearest neighbor by a spacing length that is greater than a width of the LED die.

24. (Original) The photon emitting device according to claim 2, wherein the spacing length is greater than or equal to six LED die widths.

25. (Original) The photon emitting device according to claim 2, further comprising:

an interconnect circuit layer to provide electrical connection to the plurality of LED dies, wherein the plurality of LED dies is arranged in a first grouping and a second grouping, wherein the first grouping of LED dies is connected to a first portion of the interconnect circuit layer and the second grouping of LED dies is connected to a second portion of the interconnect circuit layer.

26. (Original) The photon emitting device according to claim 25, wherein the plurality of LED dies is further arranged in a third grouping of LED dies and wherein the third grouping of LED dies is connected to a third portion of the interconnect circuit layer.

27. (Original) The photon emitting device according to claim 25, wherein a first output intensity of at least one LED die of the first grouping of LED dies is controllable separate from a second output intensity of at least one LED die of the second grouping of LED dies.

28. (Original) The photon emitting device according to claim 27, wherein the plurality of optical waveguides comprises a plurality of optical fibers, wherein emission from the first grouping of LED dies is in optical communication with a first group of optical fibers, and wherein emission from the second grouping of LED dies is in optical communication with a second group of optical fibers.

29. (Original) The photon emitting device according to claim 28, wherein the second ends of the second group of optical fibers emit radiation in a second direction different from a first direction of radiation emitted by the second ends of the first group of optical fibers.

30. (Original) The photon emitting device according to claim 26, wherein the first grouping of LED dies comprise red emitting LED dies, wherein the second grouping of LED dies comprise blue emitting LED dies, and wherein the third grouping of LED dies comprise green emitting LED dies.

31. (Original) The photon emitting device according to claim 6, wherein the fiber array connector is adapted to engage in a receptacle.

32. (Original) The photon emitting device according to claim 2, wherein at least a portion of the plurality of LED dies comprise ultraviolet emitting LED dies.

33. (Original) The photon emitting device according to claim 2, wherein each LED die is in optical communication with a phosphor material to convert an output emission of each LED die to a different colored light.

34. (Original) A vehicle headlight comprising the photon emitting device according to claim 1.

35. (Original) A dental curing apparatus comprising the photon emitting device of claim 1.

36. (Original) A projection system comprising the photon emitting device of claim 1.

37. (Original) An LCD display comprising the photon emitting device of claim 1, wherein the photon emitting device is adapted for backlighting.

38. (Currently Amended) A photon emitting system, comprising:

a solid state light source, comprising

a plurality of LED dies to generate optical radiation,

a plurality of optical concentrators, wherein each optical concentrator receives illumination from a corresponding one of said LED dies, and

a plurality of optical fibers, wherein each of the plurality of optical fibers includes a first end and a second end, wherein each first end receives concentrated illumination from a corresponding optical concentrator; and

a controller, coupled to the solid state light source, to selectively activate one or more groups of the plurality of LED dies, wherein the controller sends an increased drive current to a first LED die channel in response to an elevated temperature.

39. (Original) The photon emitting system according to claim 38, further comprising:

an interconnect circuit layer to provide electrical connection to the plurality of LED dies and electrically coupled to the controller;

a heat sink; and

a thermally conductive adhesive to thermally couple the interconnect circuit layer to the heat sink.

40. (Original) The photon emitting system according to claim 38, wherein the solid state light source further comprises:

a fiber array connector to support the first ends of the plurality of optical fibers in a defined pattern; and

a sheeting to support the array of optical concentrators.

41. (Original) The photon emitting system according to claim 40, further comprising a support structure, having a first aperture to enclose a perimeter of the fiber array connector and a second aperture, to stabilize the plurality of optical waveguides between the first and second ends.

42. (Original) The photon emitting system according to claim 38, wherein the LED die array comprises a first grouping of red emitting LED dies, a second grouping of blue emitting LED dies, and a third grouping of green emitting LED dies.

43. (Original) The photon emitting system according to claim 38, wherein the controller selectively activates a first LED die channel in response to a trigger signal.

44. (Original) The photon emitting system according to claim 38, wherein the controller sends an increased drive current to a first LED die channel to compensate for a reduced emission output from a second LED die channel.

45. (Cancelled)

46. (Currently Amended) A vehicular headlight illumination system comprising a solid state light source located in a first vehicle compartment to generate a selected illumination pattern, the solid state light source comprising a plurality of solid state light emitters, each of the solid state light emitters being optically coupled to a plurality of corresponding optical fibers, wherein heat generated by the solid state light source is distributed to a location apart from the first compartment.

47. (Original) The vehicular headlight illumination system according to claim 46, wherein the selected illumination pattern is steerable.

48 (New) The vehicular headlight illumination system according to claim 47, wherein the solid state light emitters face a common direction and wherein the optical fibers are divided into at least three groups, a forward facing group, a right facing group, and a left facing group, and wherein selected illumination pattern is steerable by triggering the output of light through the different groups of optical fibers.